

Application No. 09/985,728
Paper Dated: December 31, 2003
In Reply to USPTO Correspondence of November 17, 2003
Attorney Docket No. 3693-011770 (LC-413)

non-flowable since both encapsulation(sic) 210, 310 are cured at 170 degrees as seen in col. 9 lines 25-54", and therefore the combination renders the present invention obvious. In Wang, however, the second thermosetting underfill material is applied to a separate substrate, not to the first thermosetting underfill material. Accordingly, Wang never achieves a chip die structure which includes both a first thermosetting underfill composition and a second thermosetting underfill composition over the first composition, both of which are present on the chip die and both of which are rendered non-flowable, such as through B-staging. Quite simply, claim 25 of the present invention provides for an integrated multilayer underfill chip structure, whereas Wang would merely achieve different underfill materials during the assembly procedure by providing the underfill materials on different surfaces.

Moreover, Wang is clearly directed to thermosetting underfill materials, which, as noted above, Gilileo clearly teaches away from the use of. In fact, one skilled in the art reading Gilileo would not be inclined to use thermosetting materials due to the specific problems associated with such thermosetting underfill materials as noted in Gilileo.

CONCLUSION

It is apparent that the cited documents fail to disclose, teach or suggest the invention as defined by the present claims, particularly involving a curable thermosetting underfill composition disposed on a chip die about the electrical contacts and rendered non-flowable, so as to provide an integrated circuit chip assembly for direct attachment to a substrate. Instead, the rejection centers on the alleged teachings of Gilileo. As noted, however, Gilileo specifically teaches away from thermosets by arguing that thermoset underfill materials are not particularly useful and inherently have problems, and suggesting that thermoplastic materials must be used as the main component of the underfill. One skilled in the art, reading the teachings of the Gilileo patent as a whole, would clearly not be motivated to provide a circuit chip with a thermosetting underfill material which does not include a thermoplastic material, particularly with Gilileo stressing the problems associated with thermosetting underfill materials. In view of the above remarks, it is apparent that Gilileo fails to teach the present invention which requires a curable thermosetting composition as the underfill material on a circuit chip assembly. Accordingly, reconsideration and

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withdrawal of the rejections under Sections 102(e) and 103 are appropriate and are therefore requested.

The present paper is an earnest attempt to advance prosecution on the merits. And in any event this paper places the application and record in better condition for appeal.

The Examiner is invited to contact Applicants' undersigned representative by telephone to discuss any of the issues presented herein, or to further discuss the application.

Respectfully submitted,

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